State of Rhode Island

Department of Administration
Division of Purchases
One Capitol Hill
Providence, RI 02908

REQUEST FOR QUOTE (RFQ) – BID# 7473367

BLOCK WALL REPAIRS - MIDSTATE FACILITY (DOT)

SUBMISSION DEADLINE: Monday, July 08, 2013 at 10:30 AM (ET)

PRE-BID CONFERENCE: ☐ NO
☒ YES Monday, June 24, 2013 at 10:00 AM (ET)

Mandatory: ☐ NO
☒ YES: Any vendor who intends to submit a bid proposal in response to this solicitation must have its designated representative attend the mandatory pre-bid conference. The representative must register at the pre-bid conference and disclose the identity of the vendor whom he/she represents. Because attendance at the pre-bid conference is mandatory, a vendor's failure to attend and register at the pre-bid conference shall result in disqualification of the vendor's bid proposal as non-responsive to the solicitation.

Location: **DOT - Midstate Maintenance Facility**
2400 New London Turnpike

East Greenwich, RI

Buyer Name: Lisa Hill
Title: Chief Buyer

QUESTIONS concerning this solicitation must be received by the Division of Purchases at (questions@purchasing.ri.gov) no later than (Monday, July 01, 2013, 5:00 PM (ET)). Questions should be submitted in a *Microsoft Word attachment.* Please reference the bid number (Bid #7473367) on all correspondence. Questions received, if any, will be posted on the Rhode Island Division of Purchases website as an addendum to this solicitation. It is the responsibility of all interested parties to download this information.

SURETY REQUIRED: NO

BOND REQUIRED: NO

PUBLIC COPY (R.I. Gen. Law 37-2-18(j): This requirement applies to all public works projects (vertical and horizontal) exceeding Five Hundred Thousand ($500,000) dollars and any combination of base bid plus all alternates.

DISK BASED BID: ☒ NO
☐ YES: See attached Disk Based Bidding Information

NOTE TO VENDORS:
Vendors must register on-line at the Rhode Island Division of Purchases website at www.purchasing.ri.gov. Offers received without the completed four-page Rhode Island Vendor Information Program (RIVIP) Generated Bidder Certification Cover Form attached may result in disqualification.

THIS IS NOT A BIDDER CERTIFICATION FORM

State of Rhode Island

Department of Administration
Division of Purchases
One Capitol Hill
Providence, RI 02908

Disk Based Bidding Information

File Format

All disk based bid files are ZIP files that you can open using the WinZip 8.1 software. The ZIP file will contain one or more files based on the type of Bid/RPF.

Downloading the Disk Based Bid

Bids that have a file for download are marked with a "D" in the Info field of the bid search results. The "D" will be an active link to the WinZip file until the bid reaches its opening date. Clicking on the active "D" link will allow you to open or save the ZIP file associated with the bid. Opening the WinZip file will download a copy to your computer's temporary directory.

Opening the Disk Based Bid

Once downloaded, you can open the ZIP file with WinZip and view the Microsoft Office files contained within the WinZip file. Immediately save (extract) the individual files to an appropriate directory on your computer, such as "Desktop" or "My Documents".

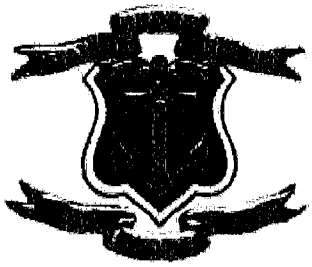
FOR THE DEPARTMENT OF TRANSPORTATION AND OTHER SPECIFIC PROJECTS:

Completing the Disk Based Bid

Once the Microsoft Office files are properly saved, open the individual files and enter the required information in the appropriate fields. Save each file again to capture the new information you entered.

Submitting the Disk Based Bid

Save the completed files to a CD or diskette. Label the CD or diskette with the Bid/RFP number and bidder's name (company name, not contract name). Submit as instructed in the Bid or RFP solicitation document.



STATE OF RHODE ISLAND
DIVISION OF PURCHASES
RFQ #7473367

Department of Transportation
Mid-State Maintenance Facility

2400 New London Turnpike
East Greenwich RI

Block Wall Base Repairs
Repair and Protection

JUNE 2013

SCOPE OF WORK

The Rhode Island Department of Transportation Division of Highway and Bridge Maintenance is seeking qualified contractors to clean, apply a protective coating and complete block wall repairs at our Midstate Facility located at 2400 New London Avenue, East Greenwich. The contractor shall furnish all labor, materials, equipment, tools, transportation and all incidental supplies required to complete the work. All work shall be in accordance with the plans, specifications and terms of the contract. Their will be a mandatory Pre-bid meeting scheduled at the site on Monday, June 24, 2013 at 10:00 a.m. to review the project and answer any questions.

***Construction Method*:**

1. Remove all loose coating and deteriorated cementitious materials on all the repair areas. In the areas of the Sikagard 62 application, all old coating must be removed.
2. Powerwash all the repair areas.
3. Sawcut 1/4" +/- around patch area and apply SikaTop 122 Leveling mortar to level substrate as needed. Let cure 3 days at 70F.
4. Apply Sikadur 62 epoxy coating to the interior of the long wall and short wall, and to just the exterior of the short rear wall. Broadcast a light coating of "00" sand to the Sikagard 62
5. Apply Sikagard 670W to cover the sanded Sikagard 62 on the rear exterior wall and Sikagard 550W to the exterior of the long wall
6. Apply sealant to form a cove joint at the floor to wall transition and between dissimilar materials at Steel columns to block areas.

Please see the attached Product data sheets and guide specifications using the products reviewed above. All work shall be in accordance with the manufacturer's specifications.

Method of Measurement: This contract will be measured as a Lump Sum item complete and accepted by The Rhode Island Department of Transportation Division of Highway and Bridge Maintenance.

Basis of Payment: This contract will be paid for at the contract Lump Sum price as listed in the proposal. The price so-stated shall constitute full and total compensation for all labor, materials, equipment, tools, transportation and incidental supplies required to complete the work in accordance with the plans , specification and terms of the contract.

Mid-State Maintenance Facility

2400 New London Turnpike, East Greenwich RI

Block Wall Base Repairs

TASKS

Leveling Mortar

Sub Item 1 - Block wallLeveling Mortar repairs, 1/8 to 1/4" deep,use SikaTop 122 Plus as needed to level surface.

Epoxy Coating

Sub Item 2 - Epoxy Coating - Coat 5 cources of block with hi-build epoxy. Exterior wall applications to receive a light coat of "00" masons sand. Use Sikagard 62 Epoxy Coating.

Protective Coatings

Sub Item 3 - Pigmented Protective Coating on exterior epoxy coated areas color to be selected by owned, use Sikagard 670W, 2 coats @ 200sf/gal/coat

Sub Item 4 - Pigmented Protective Coating on exterior base of long wall. Color to be selected by owner. Use Sikagard 550W, 2 coats @ 100sf/gal/coat

Sealant Repair

Sub Item 5 - Sealant Cove Bead up to 3/4" to the wall to floor transition use Sikaflex 2C NS.

Sub Item 6 - Dissimilar Materials to be caulked with the bead, up to 3/4" wide this is in the steel colums to CMU block joints, use Sikaflex 2C NS.

CONTRACT SPECIFICATIONS AND DETAILS

DIVISION 3 - CONCRETE
Section 03550 - Concrete Toppings
Section 03720 - Concrete Resurfacing
Section 03730 - Concrete Rehabilitation
Part 1 – General

1.01 Summary

A. This specification describes the patching or overlay of interior and/or exterior horizontal surfaces and thin vertical surfaces with a polymer-modified, portland cement mortar/concrete.

1.02 Quality Assurance

A. Manufacturing qualifications: The manufacturer of the specified product shall be ISO 9001 certified and have in existence a recognized ongoing quality assurance program independently audited on a regular basis.

B. Contractor qualifications: Contractor shall be qualified in the field of concrete repair and protection with a successful track record of 5 years or more. Contractor shall maintain qualified personnel who have received product training by a manufacturer's representative

C. Install materials in accordance with all safety and weather conditions required by manufacturer or as modified by applicable rules and regulations of local, state and federal authorities having jurisdiction. Consult Material Safety Data Sheets for complete handling recommendations.

1.03 Delivery, Storage, and Handling

A. All materials must be delivered in original, unopened containers with the manufacturer's name, labels, product identification, and batch numbers. Damaged material must be removed from the site immediately.

B. Store all materials off the ground and protect from rain, freezing or excessive heat until ready for use.

C. Condition the specified product as recommended by the manufacturer.

1.04 Job Conditions

A. Environmental Conditions: Do not apply material if it is raining or snowing or if such conditions appear to be imminent. Minimum application temperature 45°F (7°C) and rising.

B. Protection: Precautions should be taken to avoid damage to any surface near the work zone due to mixing and handling of the specified material.

1.05 Submittals

A. Submit two copies of manufacturer's literature, to include: Product Data Sheets, and appropriate Material Safety Data Sheets (MSDS).

1.06 Warranty

A. Provide a written warranty from the manufacturer against defects of materials for a period of one (1) year, beginning with date of substantial completion of the project.

Part 2 - Products

2.01 Manufacturer

A. **SikaTop 122 Plus**, as manufactured by Sika Corporation, is considered to conform to the requirements of this specification.

2.02 Materials

A. Polymer-modified Portland cement mortar:

1. Component A shall be a liquid polymer emulsion of an acrylic copolymer base and additives.
    a. pH: 4.5-6.5
    b. Film Forming Temperature: 73°F max.
    c. Tear Strength: 950-psi min.
    d. Elongation at Break: 500% min.
    e. Particle Size: less than 0.1 micron
2. Component A shall contain an organic, penetrating corrosion inhibitor which has been independently proven to reduce corrosion in concrete via ASTM G3 (half-cell potential tests). The corrosion inhibitor shall not be calcium nitrite, and shall have a minimum of 5 years of independent field testing to document performance on actual construction projects.
3. Component B shall be a blend of selected portland cements, specially graded aggregates, admixtures for controlling setting time, water reducers for workability, and an organic accelerator.
4. The materials shall be non-combustible, both before and after cure.
5. The materials shall be supplied in a factory-proportioned unit.
6. The polymer-modified, portland cement mortar must be placeable from 1/8-in. to 1-in. in depth per lift for horizontal applications.

B. To prepare a polymer-modified portland cement concrete: aggregate shall conform to ASTM C-33. The factory-proportioned unit shall be extended with 42-lb. max. of a 3/8 in. (No.8 distribution per ASTM C-33, Table II) clean, well-graded, saturated surface dry aggregate, having low absorption and high density. Aggregate must be approved for use by the Engineer.

2.03 Performance Criteria

A. Typical Properties of the mixed polymer-modified, portland cement mortar:

1. Working Time: Approximately 30 minutes
2. Finishing Time: 50-120 minutes
3. Color: concrete gray when mixed

B. Typical Properties of the cured polymer-modified, portland cement mortar:

1. Compressive Strength (ASTM C-109 Modified)
    a. 1 day: 3000 psi min. (20.7 MPa)
    b. 7 day: 5500 psi min. (37.9 MPa)
    c. 28 day: 7000 psi min. (48.3 MPa)
2. Flexural Strength (ASTM C-293) @ 28 days: 2000 psi (13.8 MPa)
3. Splitting Tensile Strength (ASTM C-496) @ 28 days 750 psi (5.2 MPa)
4. Bond Strength (ASTM C-882 Modified) @ 28 days: 2200 psi (15.2 MPa)
5. The portland cement mortar shall not produce a vapor barrier.
6. Density(wet mix): 136 lbs. / cu. ft. (2.18 kg/l)
7. Permeability (AASHTO T-277 @ 28 days Approximately 500 Coulombs)

Note: Tests above were performed with the material and curing conditions @ 71°F – 75°F and 45-55% relative humidity.

Part 3 – Execution

3.01 Surface Preparation

A. Areas to be repaired must be clean, sound, and free of contaminants. All loose and deteriorated concrete shall be removed by mechanical means. Mechanically prepare the concrete substrate to obtain a surface profile of +/- 1/16" (CSP 5 or greater as per ICRI Guidelines) with a new exposed aggregate surface. Area to be patched shall not be less than 1/8" in depth.

B. Where reinforcing steel with active corrosion is encountered, sandblast the steel to a white metal finish to remove all contaminants and rust. Where corrosion has occurred due to the presence of chlorides, the steel shall be high pressure washed after mechanical cleaning. Prime steel with 2 coats of Sika Armatec 110 EpoCem as directed by manufacturer. (See Spec Component SC-201-0699)

3.02 Mixing and Application

A. Mechanically mix in appropriate sized mortar mixer or with a Sika jiffy paddle and low speed (400-600 rpm) drill. Pour approximately 4/5 gal Component A into the mixing container. Add Component B while continuing to mix. Mix to a uniform consistency for a maximum of three minutes. Add remaining Component A to mix if a more loose consistency is desired. Should smaller quantities be needed, be sure the components are measured in the correct ratio and that the Component B is uniformly blended before mixing the components together. Mix only that amount of material that can be placed in 30 minutes. Do not retemper material.

B. Mixing of the polymer-modified portland cement concrete: Pour all (1-gallon) of Component A into the mixing container. Add Component B while continuing to mix. Add correct amount of the pre-approved coarse aggregate, and continue mixing to a uniform consistency. Mixing time should be 3 minutes maximum.

C. Placement Procedure: At the time of application, the substrate should be saturated surface dry with no standing water. Mortar and/or concrete must be scrubbed into substrate filling all pores and voids. While the scrub coat is still plastic, force material against edge of repair, working toward center. Allow mortar to set to desired stiffness, then finish with trowel, manual or power, for smooth surface. Areas where the depth of the repair is less than 1-inch shall be repaired with polymer-modified portland cement mortar.

D. As per ACI recommendations for portland cement concrete, curing is required. Moist cure with wet burlap and polyethylene, a fine mist of water or a water-based* compatible curing compound. Moist curing should commence immediately after finishing and continue for 48 hours. Protect newly applied material from rain, sun, and wind until compressive strength is 70% of the 28-day compressive strength. To prevent from freezing cover with insulating material. Setting time is dependent on temperature and humidity.

*Pretesting of curing compound is recommended.

E. Adhere to all procedures, limitations and cautions for the polymer-modified portland cement mortar in the manufacturers current printed technical data sheet and literature.

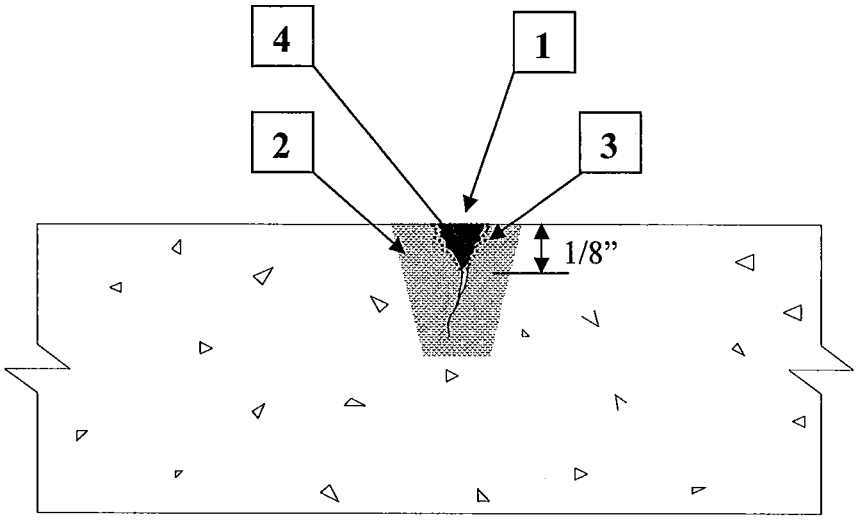
3.05 Cleaning

A. The uncured polymer-modified portland cement mortar can be cleaned from tools with water. The cured polymer -modified portland cement mortar can only be removed mechanically.

B. Leave finished work and work area in a neat, clean condition without evidence of spillovers onto adjacent areas.

SC-025

SikaTop® 122 Plus Crack Repair



1. Substrate shall be clean, sound and lattinance-free prior to repairing.

2. Pre-soak the substrate to provide saturated surface dry (SSD) condition prior to applying repair material.

3. Apply scrub coat of the repair material to the prepared substrate.

4. While scrub coat is wet place SikaTop 122 *Plus*, filling the entire cavity. Strike off and finish as required. Wet cure and protect as per the technical data sheet.

C-025

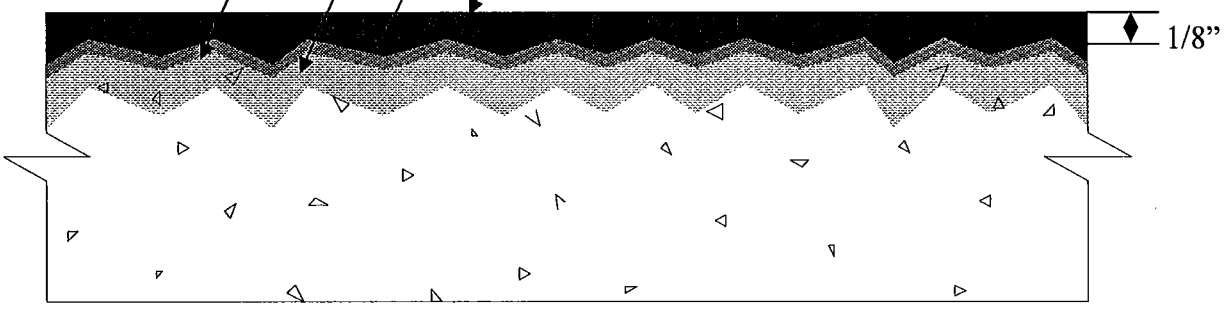
SikaTop® 122 Plus Overlay

1. Substrate shall be clean, sound and lattinance-free prior to repairing. Surface profile shall be a CSP 5-8. (Refer to ICRI Technical Guideline No. 03730.)

2. Pre-soak the substrate to provide saturated surface dry (SSD) condition prior to applying repair material.

3. Apply scrub coat of the repair material to the prepared substrate, filling all pours and voids.

4. While scrub coat is wet place SikaTop 122 *Plus*, filling the entire cavity. Strike off and finish as required. Wet cure and protect as per the technical



Note:

1. If repair area is too large to fill while scrub coat is still wet, use Sika Armatec 110 EpoCem in lieu of the scrub coat. (See Spec Component SC-200)
2. If reinforcing steel is located within the repair location refer to Spec Component SC-201
3. For applications greater than 1" in depth, add 3/8" coarse aggregate in accordance to the technical data sheet.

DIVISION 9 - FINISHES
Section 09900 Coatings

Part 1 - General

1.01 Summary

A. This specification describes the coating of substrates with a vapor-barrier, solvent-free, protective, dampproofing, waterproofing, moisture-insensitive, epoxy resin coating.

1.02 Quality Assurance

A. Manufacturing qualifications: The manufacturer of the specified product shall be ISO 9001 certified and have in existence a recognized ongoing quality assurance program independently audited on a regular basis.

B. Contractor qualifications: Contractor shall be qualified in the field of concrete repair and protection with a successful track record of 5 years or more. Contractor shall maintain qualified personnel who have received product training by a manufacturer's representative.

C. Install materials in accordance with all safety and weather conditions required by manufacturer or as modified by applicable rules and regulations of local, state and federal authorities having jurisdiction. Consult Material Safety Data Sheets for complete handling recommendations.

1.03 Delivery, Storage, and Handling

A. All materials must be delivered in original, unopened containers with the manufacturer's name, labels, product identification, and batch numbers. Damaged material must be removed from the site immediately.

B. Store all materials off the ground and protect from rain, freezing or excessive heat until ready for use.

C. Condition the specified product as recommended by the manufacturer.

1.04 Job Conditions

A. Environmental Conditions: Do not apply material if it is raining or snowing or if such conditions appear to be imminent. Minimum application temperature 40°F (5°C) and rising.

B. Protection: Precautions should be taken to avoid damage to any surface near the work zone due to mixing and handling of the specified material.

1.05 Submittals

A. Submit two copies of manufacturer's literature, to include: Product Data Sheets and appropriate Material Safety Data Sheets (MSDS).

1.06 Warranty

A. Provide a written warranty from the manufacturer against defects of materials for a period of one (1) year, beginning with date of substantial completion of the project.

Part 2 - Products

2.01 Manufacturer

A. **Sikagard 62**, as manufactured by Sika Corporation, 1682 Marion Williamsport Road, Marion, Ohio, 43302 is considered to conform to the requirements of this specification.

2.02 Materials

A. Epoxy resin coating:

1. Component A shall be a epoxy resin of diglycidilether of bisphenol A containing suitable viscosity control agents. It shall not contain butyl glycidyl ether.

2. Component B shall be primarily a reaction product of a selected amine blend with an epoxy resin of the epichlorohydrin bisphenol A type containing suitable viscosity control agents, pigments, and accelerators.

3. The ratio of Component A: Component B shall be 1:1 by volume

B. Granules for slip-resistance shall be supplied by the manufacturer of the specified product and shall be able to be mixed into the coating and shall not settle during application.

2.03 Performance Criteria

A. Typical Properties of the mixed epoxy resin coating:

1. Pot Life: 35- 40 minutes (60 gram mass)
2. Tack FreeTime: Approximately 4 hours
3. Color: red, grey, tan
4. Solids: 100% VOC g/l : 134 (A+B)
5. Immersion & Chemical Exposure: min. Cure 3 Days

Typical Properties of the cured epoxy resin coating:

Water Absorption (ASTM D-570) at 7days: 0.1% max. (2 hour boil), 24 hour immersion

Elongation (ASTM D-522) at 14 days: 5% min.

Abrasion Resistance (ASTM D-968) at 14 days: 51 liters/mil

Adhesion classification (ASTM 3359) at 14 days: 4A.

Abrasion (Taber Abrader) at 7 days: Weight loss: 0.65 gm. max. (H-22 wheel; 1000 gm weight; 1000 cycles)

Tensile Properties (ASTM D-638) at 14 days: Tensile Strength 5,400 psi (37.3 Mpa) / Elongation at Break 2.7%

Bond Strength (ASTM C-882) Hardened Concrete to Hardened Concrete

2 Day (dry cure): 2,000 psi (13.79 MPa)

14 Day (moist cure): 1,500 psi. (10.34 MPa)

8. The coating shall have United States Department of Agriculture approval.

Note: Tests above were performed with the material and curing conditions @ 71°F – 75°F and 45-55% relative humidity.

Part 3 – Execution

3.01 Surface Preparation

A. Substrate must be clean, sound, and free of surface contaminants. Remove dust, laitance, grease, oils, curing compounds, form release agents and all foreign particles by mechanical means. Substrate shall be in accordance with ICRI Guideline No. 03732 for coatings.

3.02 Mixing and Application

A. Mixing: Premix each component. Proportion equal parts by volume of Component A and Component B into a clean, dry mixing pail. Mix throughly for 3 minutes min. with a jiffy paddle on a low-speed (400-600 rpm) drill. Mix only that quantity of material that can be used within its pot life (35 minutes at 73F). To minimize color difference, blend two complete Components B's together. Use only one of the blended Component B's to mix with a Component A. After the first Component B has been used, blend the second Component B with a new Component B and repeat the above procedeure for the entire application.

B. Placement Procedure: The epoxy resin coating shall be applied only to approved, prepared surfaces with high-quality brushes, rollers, or spray equipment. Coating shall be applied at ambient and substrate temperatures between 50 and 90F. Application thickness shall be between 4-7 mils per coat. Subsequent coats shall be applied within 48 hours of the previous coat. Care is to be taken on vertical and overhead surfaces to avoid sags or runs. If this occurs, it must be sanded out and the area re-coated. If coating of horizontal surfaces that will receive traffic is specified, a slip-resistant aggregate, Sikagard 62 Granules, shall be incorporated into the mixed epoxy resin coating at 1/2 lb./gallon or as directed by the engineer.

C. When applying the coating, if possible never stop the application until the entire surface has been coated. If possible always discontinue at an edge, corner, or joint. Never let a previously coated film dry. Always coat into wet film. Always apply the coating at a 45^0 angle to an edge, corner, or joint.

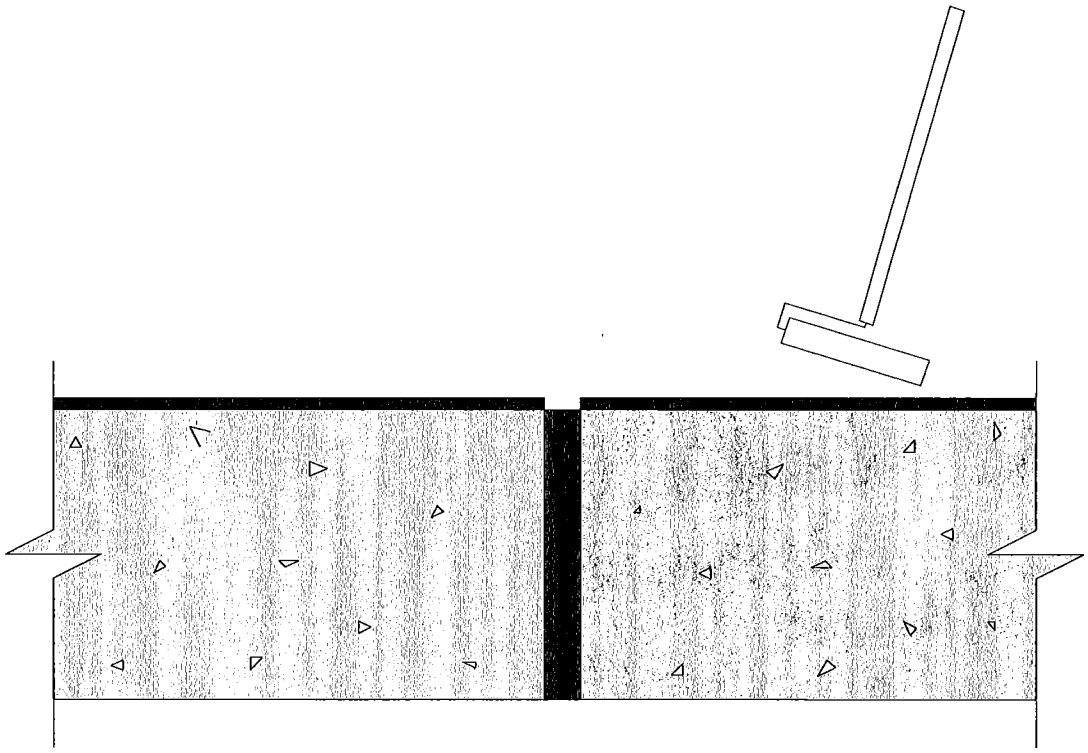
D. Adhere to all limitations and cautions for the epoxy resin as stated in the manufacturers printed literature.

3.03 Cleaning

A. The uncured epoxy resin coating can be cleaned from tools with an approved solvent. The cured epoxy resin coating can only be removed mechanically.

B. Leave finished work and work area in a neat, clean condition without evidence of spillovers onto adjacent areas.

SC-054 Sikagard 62 Coating



1. Apply Sikagard 62 with high quality brushes or rollers. Care should be taken to avoid sags or runs.
2. When applying the coating, never stop the application until the entire surface has been coated.
3. Subsequent coats shall be applied within 48 hours of the previous coat.
4. For a slip-resistant surface, aggregate shall be incorporated into the mixed epoxy resin coating at a ½ lb./gal.

Note: When applying Sikagard 62 always end at an edge, corner or joint. Do not apply 62 directly over joint filler.

DIVISION 9 - FINISHES
Section 09880 Protective Coatings

Part 1 - General

1.01 Summary

A. This specification describes the coating of substrates with an anti-carbonation, protective coating.

1.02 Quality Assurance

A. Manufacturing qualifications: The manufacturer of the specified product shall be ISO 9001:2008 certified and have in existence a recognized ongoing quality assurance program independently audited on a regular basis.

B. Contractor qualifications: Contractor shall be qualified in the field of concrete repair and protection with a successful track record of 5 years or more. Contractor shall maintain qualified personnel who have receivced product training by manufacturer's representative

C. Install materials in accordance with all safety and weather conditions required by manufacturer or as modified by applicable rules and regulations of local, state and federal authorities having jurisdiction. Consult Material Safety Data Sheets for complete handling recommendations.

1.03 Delivery, Storage, and Handling

A. All materials must be delivered in original, unopened containers with the manufacturer's name, labels, product identification, and batch numbers. Damaged material must be removed from the site immediately.

B. Store all materials off the ground and protect from rain, freezing or excessive heat until ready for use.

C. Condition the specified product as recommended by the manufacturer.

1.04 Job Conditions

A. Environmental Conditions: Do not apply material if it is raining or snowing or if such conditions appear to be imminent. Minimum application temperature 45°F (7°C) and rising.

B. Protection: Precautions should be taken to avoid damage to any surface near the work zone due to mixing and handling of the specified material.

1.05 Submittals

A. Submit two copies of manufacturer's literature, to include: Product Data Sheets, and appropriate Material Safety Data Sheets (MSDS).

B. Submit copy of Certificate of Approved Contractor status by manufacturer.

1.06 Warranty

A. Provide a written warranty from the manufacturer against defects of materials for a period of one (1) year, beginning with date of substantial completion of the project.

Part 2 – Products

2.01 Manufacturer

A. **Sikagard 670W**, as manufactured by Sika Corporation, 1682 Marion Williamsport Road, Marion, Ohio, 43302 is considered to conform to the requirements of this specification.

B. **Sikagard Elastic Textured Base Coat,** manufactured by SikaCorporation 1682 Marion Williamsport Road, Ohio 43302 is considered to conform to requirements of this specification

C. **Sikagard 552W Primer or SikaLatex R,** as manufactured by Sika Corporation, 1682 Marion Williamsport Road, Marion, Ohio, 43302 is considered to conform to the requirements of this specification.

2.02 Materials

A. Protective Acrylic Coating:

1. **Product shall be 100% Acrylic Emulsion with the following properties:**
   - **a. Non-vapor barrier**
   - **b. Must resist ingress of chlorides**
   - **c. Must resist ingress of carbon dioxide**
   - **d. The material shall be non-combustible, both before and after cure.**

B. Elastomeric Acrylic Textured Base Coating:

1. **Product shall be 100% Acrylic Emulsion with the following properties:**
   - **a. Water vapor permeable**
   - **b. Can bridge dynamically moving cracks**
   - **c. Crack bridging properties maintained at low temperatures**

B. Surface Conditioner / Adhesion Promoter:

1. **Product shall be a water-based acrylic surface conditioner/ primer and promote adhesion of acrylic coatings.**
   - **a. Solids content 12.5% - 20% by volume**
   - **b. Recoat time 4- 24 hours**

2.03 Performance Criteria

A. Properties of the protective acrylic coating:

1. **Pot Life: indefinite**
2. **Tack Free Time 1 Hour @ 73°F, 50% Relative Humidity. Final Cure < 24 Hours**
3. **Carbon Dioxide Diffusion: μCO_2 1,100,000 Carbon Dioxide Diffusion Resistance at 5 mils (120 microns) $SdCO_2$ = 433 ft (132 m) equivalent air thickness. i.e. Approx. 13-in. of standard concrete cover.**
4. **Water Vapor Diffusion: μH_2O 13,140. Water Vapor Diffusion Resistance at 5 mils (120 microns) SdH_2O = 1.3 ft (0.4 m) equivalent air thickness.**
5. **Moisture Vapor permeability (ASTM E96) 17.9 perms**
6. **Solids content: By weight: 60% By Volume: 46%**
7. **Flame spread and smoke development (ASTM E-84-94)**
   - **a. Flame Spread 0**
   - **b. Smoke Development 5**
   - **c. Class Rating A**
8. **Resistance to wind driven rain (TT-C-555B): No passage of water through coating.**

Note: Tests above were performed with the material and curing conditions @ 71°F – 75°F and 45-55% relative humidity.

Part 3 – Execution

3.02 Surface Preparation

A. Substrate must be clean, sound, and free of surface contaminants. Remove dust, laitance, grease, oils, curing compounds, form release agents and all foreign particles by mechanical means. Substrate shall be in accordance with ICRI Guideline No. 03732 for coatings and fall within CSP1 to CSP3.

3.02 Mixing and Application

A. Mixing: Stir materials to ensure uniformity using a low speed (400-600 rpm) drill and paddle. To minimize color variation, blend two batches of material.(boxing)

B. Coating Application: Apply by brush, roller, or spray over entire area moving in one direction. A minimum of two coats are required. Each coat should be applied at a rate not to exceed 250-sq. ft. per gallon. Total dry film thickness shall be a minimum 2.5 – 3 dry mils per coat. Allow a minimum of 1 hour prior to re-coating.

C. When applying the coating, never stop the application until the entire surface has been coated. Always stop application at an edge, corner, or joint. Never let a previously coated film dry; always coat into a wet film. Always apply the coating at a 45° angle to an edge, corner, or joint.

D. If substrate has been previously coated and presents a "chalky" condition, apply 1 coat of Sikagard 552W or Sika Latex R, primer/surface conditioner by brush, roller, or spray at a rate not to exceed 300 sq. ft. per gallon.

E. Adhere to all limitations and cautions for the acrylic coating in the manufacturer's printed literature.

3.03 Cleaning

A. The uncured acrylic coating can be cleaned from tools with water. The cured acrylic coating can only be removed mechanically.

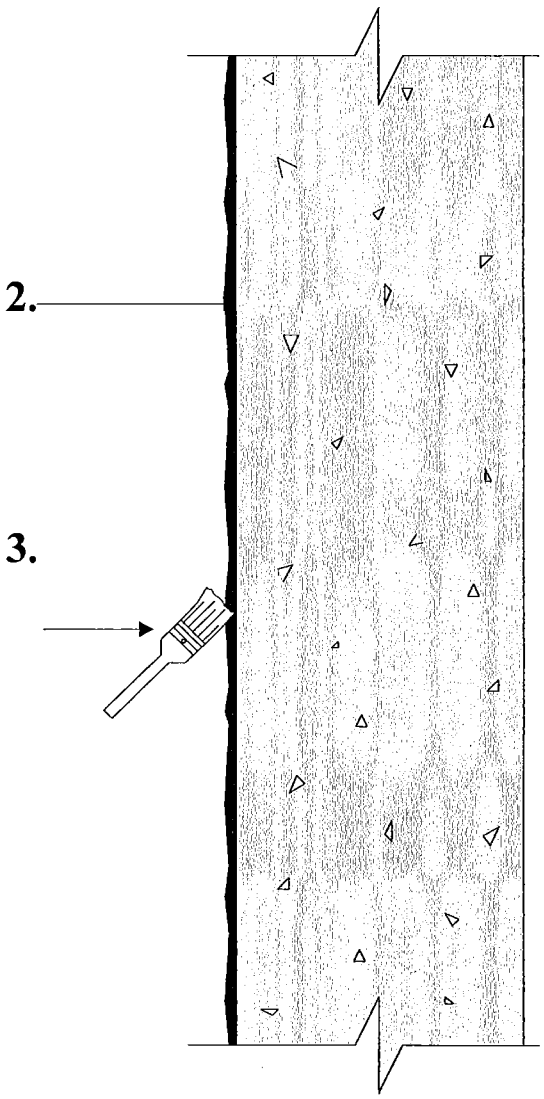
B. Leave finished work and work area in a neat, clean condition without evidence of spillovers onto adjacent areas.

SC-060 Sikagard 670W®, Anti-Carbonation, Protective Coating

1. **Substrate must be dry, clean and sound.**

2. **Condition surface with Sikagard 552W or SikaLatex R(as needed)**

3. **Apply Sikagard 670W by brush, roller or spray over entire area moving in one direction.**



DIVISION 9 - FINISHES
Section 09830 Elastomeric Coatings

Part 1 - General

1.01 Summary

A. This specification describes the coating of substrates with an elastomeric, crack bridging, anti-carbonation, protective coating.

1.02 Quality Assurance

A. Manufacturing qualifications: The manufacturer of the specified product shall be ISO 9001:2008 certified and have in existence a recognized ongoing qaulity assurance independently audited on a regular basis.

B. Contractor qualifications: Contractor shall be qualified in the field of concrete repair and protection with a successful track record of 5 years or more. Contractor shall maintain qualified personnel who have receivced product training by a manufacturer's representative.

C. Install materials in accordance with all safety and weather conditions required by manufacturer or as modified by applicable rules and regulations of local, state and federal authorities having jurisdiction. Consult Material Safety Data Sheets for complete handling recommendations.

1.03 Delivery, Storage, and Handling

A. All materials must be delivered in original, unopened containers with the manufacturer's name, labels, product identification, and batch numbers. Damaged material must be removed from the site immediately.

B. Store all materials off the ground and protect from rain, freezing or excessive heat until ready for use.

C. Condition the specified product as recommended by the manufacturer.

1.04 Job Conditions

A. Environmental Conditions: Do not apply material if it is raining or snowing or if such conditions appear to be imminent. Minimum application temperature 45°F (7°C) and rising.

B. Protection: Precautions should be taken to avoid damage to any surface near the work zone due to mixing and handling of the specified material.

1.05 Submittals

A. Submit two copies of manufacturer's literature, to include: Product Data Sheets, and appropriate Material Safety Data Sheets (MSDS).

1.06 Warranty

A. Provide a written warranty from the manufacturer against defects of materials for a period of one (1) year, beginning with date of substantial completion of the project.

Part 2 - Products

2.01 Manufacturer

A. **Sikagard 550W Elastocolor**, as manufactured by Sika Corporation, 1682 Marion Williamsport Road, Marion, Ohio, 43302 is considered to conform to the requirements of this specification.

B. **Sikagard Elastic Base Coat (Smooth & Textured),** as manufactured by Sika Corporation, 1682 Marion Williamsport Road, Marion, Ohio, 43302 is considered to conform to the requirements of this specification.

C. **Sikagard 552W Primer or SikaLatex R,** as manufactured by Sika Corporation, 1682 Marion Williamsport Road, Marion, Ohio, 43302 is considered to conform to the requirements of this specification.

2.02 Materials

A. Elastomeric Acrylic Coating:

1.Product shall be 100% Acrylic Emulsion with the following properties:

a. Water vapor permeable

b. Can bridge dynamically moving cracks

c. Crack bridging properties maintained at low temperatures

d.The material shall be resistant to dirt pick-up and mildew

B. Elastomeric Acrylic Smooth & Textured Base Coating:

1.Product shall be 100% Acrylic Emulsion with the following properties:

a. Water vapor permeable

b. Can bridge dynamically moving cracks

c. Crack bridging properties maintained at low temperatures

C. Adhesion Promoter / Surface Conditioner

1.Product shall be a water-based, acrylic primer with the following properties:

a. Solids content 12.5% -20% by volume

b. Recoat time 4 – 24 hours

2.03 **Performance Criteria**

A. Properties of the elastomeric Sikagard 550W Elastocolor acrylic coating:

1. Pot Life: indefinite

2. Tack Free Time 6 Hours @ 73°F, 50% Relative Humidity. Final Cure < 24 Hours

3. Carbon Dioxide Diffusion: μCO_2 214,000 Carbon Dioxide Diffusion Resistance at 16 mils (400 microns)

$SdCO_2$ = 299 ft. (equivalent air thickness) i.e. Approx. 9-in. of standard concrete cover.

4. Water Vapor Diffusion: μH_2O 2,146 Water Vapor Diffusion Resistance at 16 mils SdH_2O = 2.6 ft. (0.8m)

(equivalent air thickness)

5. Moisture Vapor permeability (ASTM E96) 14.5 perms

6. Tensile Properties (ASTM D-412 Modified)

7 day-Tensile strength 190 psi (1.3 MPa) - Elongation at break 820% - 340% @ 0°F (-18°C)

7. Crack Bridging(at 16 mils = 400 microns DFT

a. Static (at –4°F/-20°C) 30 mils (0.75mm)

b. Dynamic>1000 cycles(at –4°F/-20°C) 12 mils (0.30mm)

8. Resistance to wind driven rain (TT-C-555B): No passage of water through coating

9. Weathering (ASTM G-23) 10,000 hours excellent, no chalking or cracking.

10. Solids Content: by weight – 62% by volume – 55%

11. Flame Spread and Smoke Development (ASTM E-84-94)

Flame Spread 5 Smoke Development 5 Class Rating A

Note: Tests above were performed with the material and curing conditions @ 71°F – 75°F and 45-55% relative humidity.

Part 3 – Execution

3.03 Surface Preparation

A. Substrate must be clean, sound, and free of surface contaminants. Remove dust, laitance, grease, oils, curing compounds, form release agents and all foreign particles by mechanical means. Substrate shall be in accordance with ICRI Guideline No. 03732 for coatings and fall within CSP1 to CSP3.

3.02 Mixing and Application

A. Mixing: Stir materials to ensure uniformity using a low speed (400-600 rpm) drill and paddle. To minimize color variation, blend two batches of material.(boxing)

B. Crack detail: Recommended application temperatures 40° - 100°F (4^0-38^0)

Small defects and cracks (non-structural): Cracks 10 – 20 mils. Apply Surface Filler "Brush Grade" generously over the center of the cracks. Feather material to zero over a two-inch wide area. Allow a minimum 24 hours to cure before overcoating.

Large defects and cracks (non-structural): Cracks >20mils. Rout to 1/4-in wide by 1/4-in. deep. Blow out cut with oil-free compressed air. Fill slot with Surface Filler "Knife Grade" allowing for a small crest to remain. This will compensate for any shrinkage that might occur. **NOTE:** *Sikaflex-1a,-2c, or -15LM, polyurethane sealant may be used in place of Knife Grade Surface Filler.* Allow 24 hours-minimum cure before over coating.

C. Coating Application: Apply by brush, roller, or spray over entire area moving in one direction. A minimum of two coats are required. Each coat should be applied at a rate not to exceed 100 sq. ft. per gallon. Total dry film thickness shall be a minimum 8 - 10 dry mils per coat. Allow a minimum of 2 hours prior to re-coating.

D. When applying the coating, never stop the application until the entire surface has been coated. Always stop application at an edge, corner, or joint. Never let a previously coated film dry; always coat into a wet film. Always apply the coating at a 45° angle to an edge, corner, or joint.

E. If substrate has been previously coated and presents a "chalky" condition, apply 1 coat of Sikagard 552W or SikaLatex R, primer/surface conditioner by brush, roller, or spray at a rate not to exceed 300 sq. ft. per gallon.

F. Adhere to all limitations and cautions for the elastomeric acrylic coating in the manufacturers printed literature.

3.03 Cleaning

A. The uncured elastomeric acrylic coating can be cleaned from tools with water. The cured elastomeric acrylic coating can only be removed mechanically.

B. Leave finished work and work area in a neat, clean condition without evidence of spillovers onto adjacent areas.

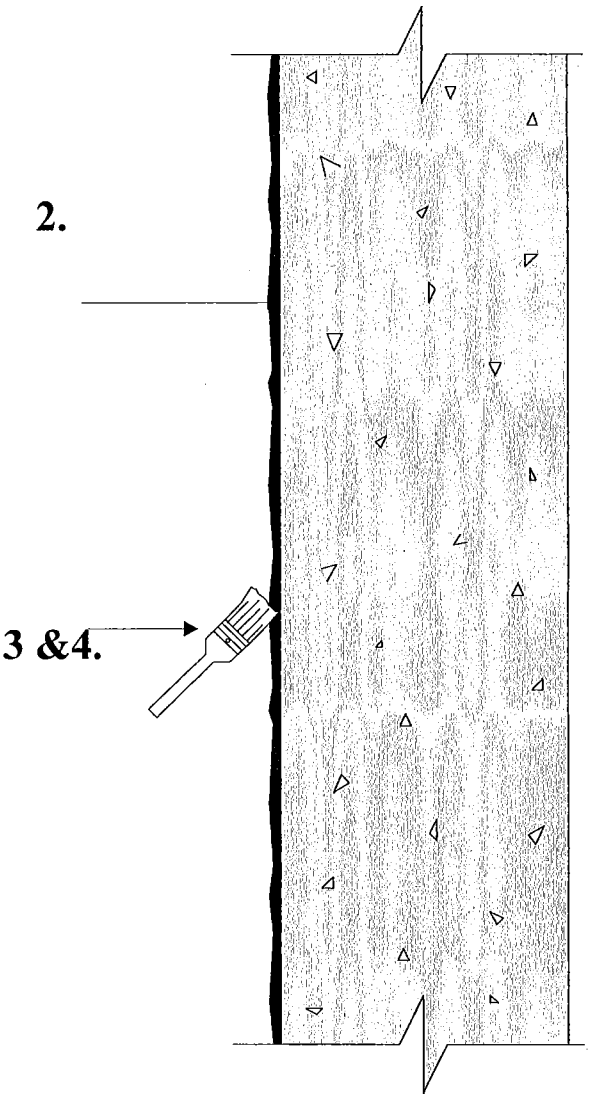
SC-058 Sikagard® 550W Elastocolor, Anti-Carbonation Crack-bridging Coating

1. Substrate must be dry, clean and sound.

2. Condition surface with Sikagard 552W or SikaLatex R(as needed)

3. Apply base coating as needed

4. Apply Sikagard 550W Elastocolor by brush, roller or spray over entire area moving in one direction.



DIVISION 7 - THERMAL AND MOISTURE PROTECTION
Section 07900 Joint Sealers
Elastomeric and non-Elastomeric Sealant

Part 1 - General

1.01 Summary

A. This specification describes the sealing of joints and cracks with a two-component, non-sag, elastomeric polyurethane sealant.

1.02 Quality Assurance

A. Manufacturing qualifications: The manufacturer of the specified product shall be ISO 9001:2008 certified and have in existence a recognized ongoing quality assurance program independently audited on a regular basis.

B. Contractor qualifications: Contractor shall be qualified in the field of concrete repair and protection with a successful track record of 5 years or more. Contractor shall maintain qualified personnel who have received product training by a manufacturer's representative.

C. Install materials in accordance with all safety and weather conditions required by manufacturer or as modified by applicable rules and regulations of local, state and federal authorities having jurisdiction. Consult Material Safety Data Sheets for complete handling recommendations.

1.03 Delivery, Storage, and Handling

A. All materials must be delivered in original, unopened containers with the manufacturer's name, labels, product identification, and batch numbers. Damaged material must be removed from the site immediately.

B. Store all materials off the ground and protect from rain, freezing or excessive heat until ready for use.

C. Condition the specified product as recommended by the manufacturer.

1.04 Job Conditions

A. Environmental Conditions: Do not apply material if it is raining or snowing or if such conditions appear to be imminent. Minimum application temperature 40°F (5°C) and rising.

B. Protection: Precautions should be taken to avoid damage to any surface near the work zone due to mixing and handling of the specified coating.

1.05 Submittals

A. Submit two copies of manufacturer's literature, to include: Product Data Sheets, and appropriate Material Safety Data Sheets (MSDS)

1.06 Warranty

A. Provide a written warranty from the manufacturer against defects of materials for a period of one (1) year, beginning with date of substantial completion of the project.

Part 2 - Products

2.01 Manufacturers

A. **Sikaflex-2c**, as manufactured by Sika Corporation, 1682 Marion Williamsport Road, Marion, OH 43302 is considered to conform to the requirements of this specification.

2.02 Materials

A. Polyurethane sealant:

1. The joint sealant shall be a two-component, non-sag polyurethane-base material. It shall be applicable in horizontal, vertical, and overhead joints. The sealant shall be principally a chemical cure to form an elastomeric substance. The color shall be introduced through a "Color-pak" system or be pretinted from the manufacturer.

B. Any primers, as required, recommended by the manufacturer of the specified product, approved by the engineer.

C. Backer rod or bond breaker tape as approved by engineer.

2.03 Performance Criteria

A. Properties of the mixed polyurethane sealant:

1. Initial Cure (Tack-Free Time): 6-10 hours
2. Consistency: non-sag
3. Color: 35 standard colors. Additional architectural colors available through color matching system

B. Properties of the cured polyurethane sealant:

1. Tensile Properties (ASTM D-412) at 14 days — Non-sag

   a. Tensile Strength at break: minimum — 120 psi

   b. Tensile Elongation: minimum — 500%

   c. Modulus of Elasticity - 100% Elongation — 70 psi, min.

2. Shore A Hardness (ASTM D-2240) at 14 days:

   a. Non-sag: 25 +/-5

3. Tear Strength (ASTM D-624) at 14 days: non-sag 45 lbs./in
4. Adhesion in Peel (TT-S-00227E, ASTM C-794) at 21 days

   a. Concrete: 25-lb. min. — 0% Adhesion Loss

5. Service Range: -40° to 170°F (-40° to 77°C)
6. The sealant shall conform to Federal Specification TT-S-00227E, Type I and II, Class A.
7. The sealant shall conform to ASTM C-920, Type M, NS, Class 25.
8. The sealant shall be capable of ±50% of the average joint width when tested in accordance to the durability bond test of Federal Specification TT-S-00227E and ASTM C-719.
9. The sealant shall be non-staining.
10. Final Cure: 3 days max.

Note: Tests were performed with material and curing conditions at 71°-75°F and 45-55% relative humidity.

Part 3 - Execution

3.01 Surface Preparation

A. The joint and adjacent substrate must be clean, dry, sound and free of surface contaminants. Remove all traces of the old sealant, dust, laitance, grease, oils, curing compounds, form release agents and foreign particles by mechanical means, i.e. – sandblasting, etc., as approved by the engineer. Blow joint free of dust using compressed air line equipped with an oil trap.

3.02 Mixing and Application

A. Mixing of the polyurethane sealant: Pour out entire contents of Component B into pail of Component A. Add entire contents of Color-pak into pail and mix with low-speed drill (400-600 rpm) and approved paddle. Mix for 3-5 minutes to achieve a uniform color and consistency. Avoid entrapment of air during mixing.

B. Joints:

1. Placement Procedure: Prime all substrates as required based upon the recommendations of the manufacturer of the specified product, when field testing indicates need, and when the joints will be subject to immersion after cure, as approved by the Engineer.
2. Install approved backer rod or bond breaker tape in all joints subject to thermal movement to prevent three-sided bonding and to set the depth of the sealant at a maximum of 1/2 in., measured at the center point of the joint width. Approval of the backer rod or bond breaker tape shall be made by the Engineer.
3. Joints shall be masked to prevent discoloration or application on unwanted areas, as directed by the Engineer. If masking tape is used, it shall not be removed before tooling, yet must be removed before the initial cure of the sealant. Do not apply the masking tape until just prior to the sealant application.
4. Install sealant into prepared joints when the joint is at mid-point of its expansion and contraction cycle.
   a. Non-sag sealant: Load the sealant into a caulking gun. Place the nozzle of the gun, either hand or air or electric powered, into the bottom of the joint and fill entire joint. Keep the tip of the nozzle in the sealant, continue with a steady flow of sealant preceding the nozzle to avoid air entrapment. Avoid overlapping the sealant to eliminate the entrapment of air. Tool, as required, to properly fill the joint.
5. Adhere to all limitations and cautions for the polyurethane sealant in the manufacturer's printed literature.

B. Cracks

1. Non-sag sealant: For best performance, sealant should be gunned into crack to a minimum of 1/4" in depth. Place the nozzle of the gun, either hand or air or electric powered, into the bottom of the crack and fill entire crack. Keep the tip of the nozzle in the sealant, continue with a steady flow of sealant preceding the nozzle to avoid air entrapment. Avoid overlapping the sealant to eliminate the entrapment of air. Tool as required to properly fill the crack.
2. Adhere to all limitations and cautions for the polyurethane sealant as stated in the manufacturers printed literature.

3.03 Cleaning

A. The uncured polyurethane sealant can be cleaned with an approved solvent. The cured polyurethane sealant can only be removed mechanically

B. Leave work area in a neat, clean condition without evidence of spillovers onto adjacent areas.

SC-071 Sikaflex®-2c NS Crack Filler

Figure 1 - Sikaflex-2c NS (non-sag)

1. Gun **Sikaflex-2c NS** into prepared crack, minimum depth ¼".
2. Tool as required to properly fill crack.

Fig. 1

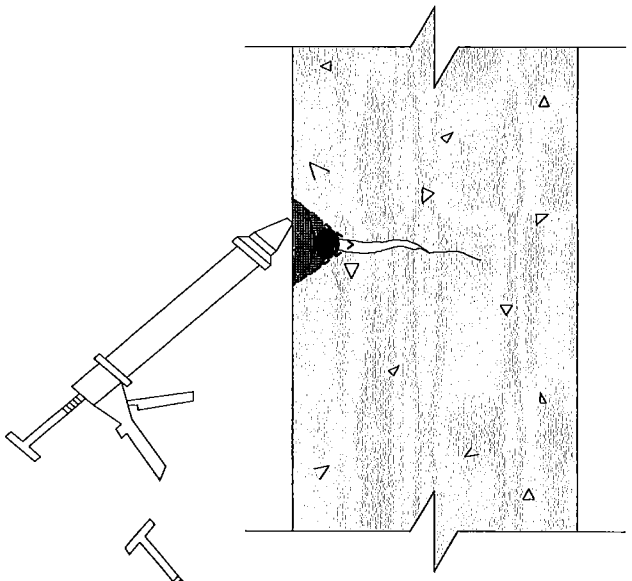
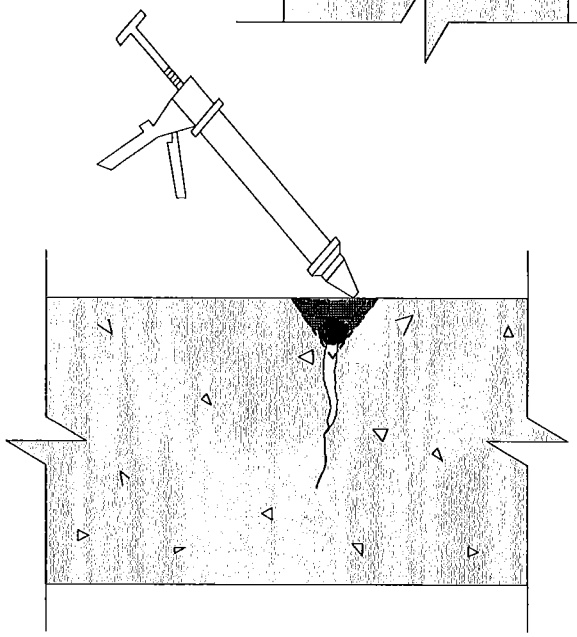


Fig. 2



SC-071 Sikaflex® 2c NS Expansion Joint Filler

Figure 1 - Sikaflex-2c NS (non-sag)

1. Install appropriate backer material to prevent three-sided adhesion and to control sealant depth.
2. **Sikaflex-2c NS** should be gunned into joint at mid-point of designed expansion and contraction.
3. Tool as required to properly fill joints.

Note: Sikaflex-2c NS is designed for all types of joints where maximum sealant depth will not exceed ½".

Fig. 1

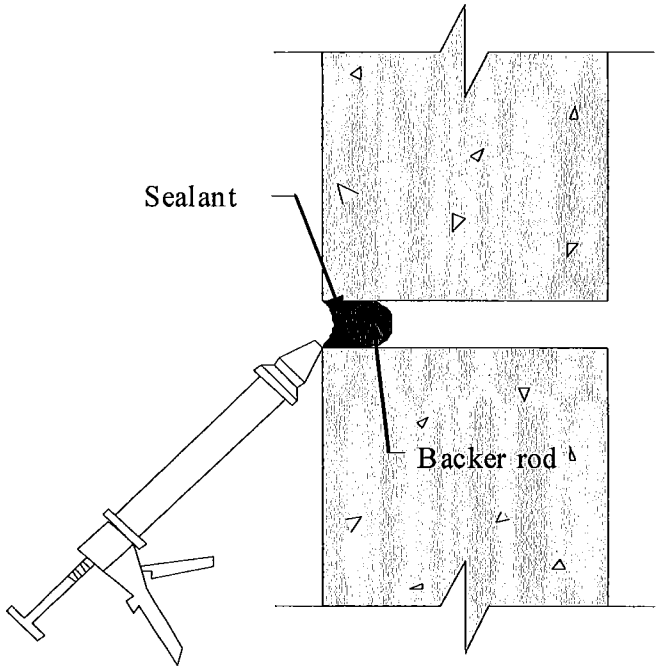
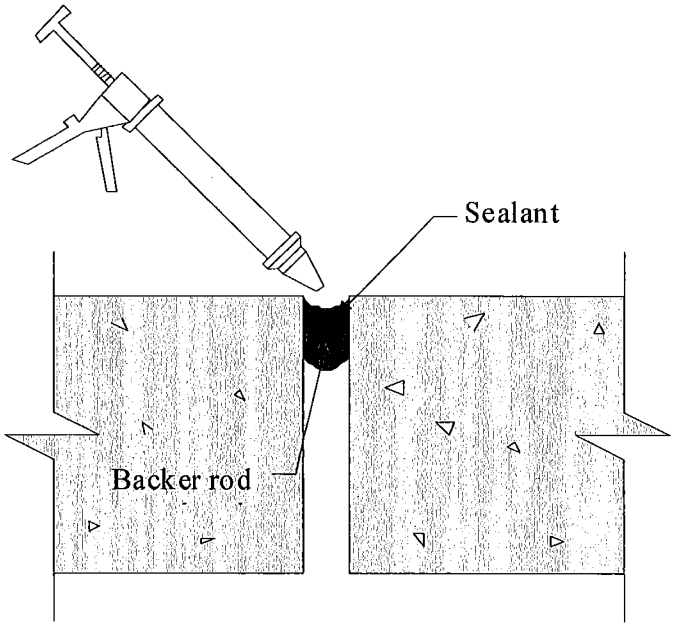


Fig. 2



REQUEST FOR QUOTE #7473367

INSURANCE

AN INSURANCE CERTIFICATE IN COMPLIANCE WITH PROVISIONS OF ITEM 31 (INSURANCE) OF THE GENERAL CONDITIONS OF PURCHASE IS REQUIRED FOR COMPREHENSIVE GENERAL LIABILITY, AUTOMOBILE LIABILITY, AND WORKERS' COMPENSATION AND MUST BE SUBMITTED BY THE SUCCESSFUL BIDDER(S) TO THE DIVISION OF PURCHASES PRIOR TO AWARD. THE INSURANCE CERTIFICATE MUST NAME THE STATE OF RHODE ISLAND AS CERTIFICATE HOLDER AND AS AN ADDITIONAL INSURED. FAILURE TO COMPLY WITH THESE PROVISIONS MAY RESULT IN REJECTION OF THE OFFEROR'S BID. ANNUAL RENEWAL CERTIFICATES MUST BE SUBMITTED TO THE AGENCY IDENTIFIED ON THE PURCHASE ORDER. FAILURE TO DO SO MAY BE GROUNDS FOR CANCELLATION OF CONTRACT.

NOTE: IF THIS BID COVERS CONSTRUCTION, SCHOOL BUSING, HAZARDOUS WASTE, OR VESSEL OPERATION, APPLICABLE COVERAGES FROM THE FOLLOWING LIST MUST ALSO BE SUBMITTED TO THE DIVISION OF PURCHASES PRIOR TO AWARD: * PROFESSIONAL LIABILITY INSURANCE (AKA ERRORS & OMISSIONS) - $1 MILLION OR 5% OF ESTIMATED PROJECT COST, WHICHEVER IS GREATER. * BUILDER'S RISK INSURANCE - COVERAGE EQUAL TO FACE AMOUNT OF CONTRACT FOR CONSTRUCTION. * SCHOOL BUSING - AUTO LIABILITY COVERAGE IN THE AMOUNT OF $5 MILLION. * ENVIRONMENTAL IMPAIRMENT (AKA POLLUTION CONTROL) - $1 MILLION OR 5% OF FACE AMOUNT OF CONTRACT, WHICHEVER IS GREATER. * VESSEL OPERATION - (MARINE OR AIRCRAFT) - PROTECTION & INDEMNITY COVERAGE REQUIRED IN THE AMOUNT OF $1 MILLION.

WAGE

VENDOR IS ADVISED THAT ALL PROVISIONS OF TITLE 37 CHAPTER 13 OF THE GENERAL LAWS OF RHODE ISLAND APPLY TO THE WORK COVERED BY THIS REQUEST, AND THAT PAYMENT OF THE GENERAL PREVAILING RATE OF PER DIEM WAGES AND THE GENERAL PREVAILING RATE FOR REGULAR, OVERTIME, AND OTHER WORKING CONDITIONS EXISTING IN THE LOCALITY FOR EACH CRAFT, MECHANIC, TEAMSTER, OR TYPE OF WORKMAN NEEDED TO EXECUTE THIS WORK IS A REQUIREMENT FOR BOTH CONTRACTORS AND SUBCONTRACTORS.